ABSTRACT OF THE DISCLOSURE

A composite design optimization process for designing a laminate part includes steps for generating a globally optimized 3-D ply definition for a laminate part, optimizing the 3-D ply definition at the individual tow level, subsequently generating a feedback signal providing tow specific information, and modifying the 3-D ply and 3-D tow definition responsive to the feedback signal. A laminate part constructed using a composite design optimization process and a composite design optimization system used in designing a laminate part, comprising circuitry for generating globally optimized 3-D ply and 3-D tow definitions for a laminate part are also described.